

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Rejection of Claims 2 to 6, 13 and 14 Under 35 U.S.C. §112

Claims 2 to 6, 13 and 14 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite for allegedly failing to particularly point out and distinctly claim the subject matter of the invention. The Office Action alleges that in claim 2, the term "corresponds" is unclear.

Applicants have amended claim 2 without prejudice to recite that the micromechanical component is a sensor element. The amendment to claim 2 obviates the 35 U.S.C. § 112, second paragraph rejection and Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 3 and 4 as indefinite because the claims allegedly fail to set forth a composition or structure of at least one stabilizing element and only claim properties of the stabilizing element.

Applicants have amended claim 3 without prejudice to recite that the at least one stabilizing element is configured to counteract a deformation of the at least one membrane. As amended claim 3 provides for a definite configuration to counteract deformation, Applicants respectfully request withdrawal of the rejection. Applicants furthermore submit that claim 4 depends from claim 3, and as such claim 4 also provides such a definite configuration. Applicants respectfully request withdrawal of the rejection of claim 4.

The Office Action rejects claim 5 as allegedly indefinite, wherein it is alleged that the terms "mesh-like" and "grid-like" are unclear.

Applicants have amended claim 5 without prejudice to change "mesh-like" to --mesh-- and to change "grid-like" to --grid--. Withdrawal of the rejection of claim 5 is respectfully requested.

The Office Action rejects claim 6 as allegedly indefinite, wherein the Office Action states that it is unclear from the Specification and the drawings what the skirt encompasses or what kind of shape it is. Claim 6 was further rejected wherein the limitation "one of recesses and etching holes in the at least one membrane" allegedly does not have proper antecedent basis for the limitation.

Applicants respectfully traverse the rejection of claim 6. Applicants respectfully submit that on page 3, lines 29 to 31, the Specification describes a

stabilizing element which may also be in a form of ring-shaped webs or skirts. Claim 6 also provides proper antecedent basis for terms included therein and as such the rejection should be withdrawn. The Office Action alleges that the term "one of recesses and etching holes in the at least one membrane" does not have proper antecedent basis in that claim 1, from which claim 6 depends, "does [not] recite that the membrane comprises recesses or holes." Office Action at p. 3. However, as stated in M.P.E.P. § 2173.05(e), "the failure to provide explicit antecedent basis for terms does not always render a claim indefinite." Rather, "[i]f the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Id.* (citing *Ex parte Porter*, 25 U.S.P.Q.2d 1144, 1145 (Bd. Pat. App. & Inter. 1992)). It is respectfully submitted that "a ring-shaped skirt arranged around one of recesses and etching holes in the at least one membrane" would be reasonably ascertainable by those skilled in the art. Applicants respectfully request withdrawal of the rejections of claim 6.

The Office Action rejects claim 13 on the basis that the term "arranged" is unclear. While Applicants respectfully submit that claim 13 as filed fully complies with the requirements of 35 U.S.C. § 112, to facilitate matters, claim 13 has been amended herein without prejudice to change "arranged" to --positioned--. It is therefore respectfully submitted that the rejection of claim 13 has been obviated, and withdrawal of this rejection with respect to claim 13 is respectfully requested.

III. Rejection of Claims 1 to 10, 13 and 14 Under 35 U.S.C. § 102(b)

Claims 1 to 10, 13 and 14 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,712,609 ("Mehregany et al."). Applicants respectfully submit that Mehregany et al. do not anticipate the present claims for the following reasons.

Claim 1 relates to a micromechanical component. Claim 1 recites a supporting body, at least one at least partially unsupported membrane connected to the supporting body and at least one stabilizing element provided in an unsupported area on some areas of the surface of the at least one membrane. Claim 1 has been amended herein without prejudice to recite that the at least one membrane extends unsupported and continuous over an entire recess etched in the supporting body, and the at least one stabilizing element is positioned between the supporting body

and the at least one membrane. Support for the amendment is found, for example, in Figure 2.

Mehregany et al. purport to relate to a micromechanical memory sensor. The Office Action alleges that Mehregany et al. describe a silicon substrate, an n-doped polysilicon layer, and a silicon nitride layer with at least one recess area. The Office Action alleges that the sensor further has a top layer of metal.

The Office Action admits that Mehregany et al. do not disclose that the at least one stabilizing element counteracts a deformation of the at least one membrane where the deformation includes warping, propagation of cracks or stresses.

Mehregany et al. do not disclose, or even suggest, the limitation of the at least one membrane extending unsupported and continuous over an entire recess etched in the supporting body. In Figure 3 of Mehregany et al., the Office Action alleges that elements 38 and 39 form the at least one partially unsupported membrane. As illustrated in Figure 3, elements 38 and 39 do not extend unsupported and continuous over an entire recess, rather elements 38 and 39 only extend partially over the gap between separate support structures 40 and 50. Applicants furthermore traverse the unsubstantiated conclusion that elements 38 and 39 constitute membranes. Elements 38 and 39 are referred to merely as "layers," and therefore there is no indication that either of these elements constitutes a membrane. Applicants furthermore submit that support structures 40 and 50 together do not form a recess. Support structures 40, 50 do not have a common base as illustrated in Figure 3 and consequently no recess is present. Support structures 40 and 50 are distinct elements and as such, no recess in a supporting body is present as required by claim 1. Applicants furthermore submit that Figures 4a to 4p and 8a to 8g do not provide the limitations recited in amended claim 1. Figures 4a to 4p and 8a to 8g do not provide a recess, but rather separate structures 40 and 50 and 440 and 450 respectively.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements

arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that Mehregany et al. do not disclose, or even suggest, all of the limitations of claim 1, namely that the at least one membrane extends unsupported and continuous over an entire recess etched in the supporting body. It is therefore respectfully submitted that Mehregany et al. do not anticipate claim 1.

Additionally, to reject a claim under 35 U.S.C. § 102, the Examiner must demonstrate that each and every claim limitation is contained in a single prior art reference. See, Scripps Clinic & Research Foundation v. Genentech, Inc., 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991). Still further, not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention, namely the inventions of the rejected claims, as discussed above. See, Akzo, N.V. v. U.S.I.T.C., 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986). In particular, it is respectfully submitted that, at least for the reasons discussed above, the reference relied upon would not enable a person having ordinary skill in the art to practice the inventions of the rejected claims, as discussed above. Also, to the extent that the Examiner is relying on the doctrine of inherency, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flows from the teachings of the applied art." See M.P.E.P. § 2112; emphasis in original; and see, Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Thus, the M.P.E.P. and the case law make clear that simply because a certain result or characteristic may occur in the prior art does not establish the inherency of that result or characteristic.

The Office Action contends that because of the an alleged use of "similar materials" in Mehregany et al., "it is reasonable to presume" that the limitations of "the at least one stabilizing element counteracts a deformation of the at lease one membrane, where the deformation includes warping, propagation of cracks or stresses" are inherent to the description of Mehregany et al. Applicants respectfully traverse this unsupported conclusion. In the present Office Action, no statement is provided that the alleged structure of the at least one stabilizing element necessarily provides the features provided in amended claim 1. The unsupported assertions that "use of similar materials . . . and in the similar production steps . . . used to produce the stabilizing layer" does not constitute

sufficient evidence or reasoning to shift the burden to Applicants to show lack of inherency.

Accordingly, the anticipation rejection as to the rejected claims must necessarily fail for the foregoing reasons.

In summary, it is respectfully submitted that Mehregany et al. do not anticipate claim 1.

As for claims 2 to 8, 10, 13 and 14, which ultimately depend from claim 1 and therefore include all of the limitations of claim 1, it is respectfully submitted that Mehregany et al. do not anticipate these dependent claims for at least the same reasons given above in support of the patentability of amended claim 1.

IV. Rejection of Claims 1 to 15 Under 35 U.S.C. § 102(b)

Claims 1 to 15 were rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,834,334 ("Leedy"). Applicants respectfully submit that Leedy does not anticipate the present claims for the following reasons.

The Office Action alleges that Leedy provides a ring shaped frame made of silicon nitride, a first dielectric membrane, a second dielectric membrane and a plurality of semiconductor devices. The Office Action alleges that Leedy provides a thickness of a dielectric membrane which may vary from less than 2 μm to over 15 μm per layer of interconnect metallization layer. The Office Action specifically notes Figure 3a as illustrating the configuration of claims 1 to 15.

The Office Action admits that Leedy does not provide the limitation of the at least one stabilizing element which is configured to counteract a deformation of the at least one membrane. The Office Action alleges that it is inherent in Leedy that the configurations illustrated counteract a deformation of the at least one membrane because of "similar materials" used to produce the stabilizing layer.

Applicants respectfully submit that Leedy does not disclose, or even suggest, the limitation of the at least one stabilizing element which is positioned between the supporting body and the at least one membrane as recited in amended claim 1. Leedy Figure 3a illustrates a dielectric membrane 36 which is alleged to be equated to the stabilizing element. Dielectric membrane 36, however, is not positioned between the supporting body and the at least one membrane. Dielectric membrane 36 is merely added to the bottom of dielectric membrane 20. Leedy does not disclose, or even suggest, that the dielectric material 36 constitute a

stabilizing element. Leedy has a completely different purpose than that required in amended claim 1. Leedy element 36 provides a connection between semiconductor devices and it is not apparent in the reference that element 36 actually provides any stabilizing capability. Fig 3b. Leedy, as a consequence, does not disclose, or even suggest, the configuration of amended claim 1.

Applicants respectfully traverse the Office Action allegation that Leedy inherently provides a configuration of at least one stabilizing element which is configured to counteract a deformation of the at least one membrane. The Office Action statement that Leedy merely uses “similar materials” does not satisfy case law requirements that allegedly inherent characteristics necessarily flow from the teachings of the applied art. Ex parte Levy. Indeed, the unsupported assertions that “use of similar materials . . . used to produce the stabilizing layer” does not constitute sufficient evidence or reasoning to shift the burden to Applicants to show lack of inherency. The Office Action and Levy do not allege or suggest the configuration of at least one stabilizing element which is configured to counteract a deformation of the at least one membrane.

As for claims 2 to 8 and 10 to 15 which ultimately depend from claim 1 and therefore include all of the limitations of claim 1, it is respectfully submitted that Leedy does not anticipate these dependent claims for at least the same reasons given in support of the patentability of amended claim 1.

V. Conclusion

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached pages are captioned “**Version with Markings to Show Changes Made.**”

It is therefore respectfully submitted that all pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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Version with Markings to Show Changes Made

IN THE CLAIMS:

Claim 9 has been canceled, without prejudice.

Claims 1, 2, 3, 5 and 13 have been amended, without prejudice, as follows:

1. (Amended) A micromechanical component, comprising:
a supporting body;
at least one at least partially unsupported membrane connected to the supporting body; and
at least one stabilizing element provided in an unsupported area on some areas of a surface of the at least one membrane, wherein the at least one membrane extends unsupported and continuous over an entire recess etched in the supporting body, and the at least one stabilizing element is positioned between the supporting body and the at least one membrane.

2. (Amended) The micromechanical component according to claim 1, wherein:
the micromechanical component [corresponds to] is a sensor element.

3. (Amended) The micromechanical component according to claim 1, wherein:
the at least one stabilizing element [counteracts] is configured to counteract a deformation of the at least one membrane.

5. (Amended) The micromechanical component according to claim 1, wherein:
the at least one stabilizing element includes one of:
a web,
a plurality of webs,
parallel webs,

Version with Markings to Show Changes Made

a [mesh-like] mesh arrangement of webs,
a [grid-like] grid arrangement of webs,
a web designed as a ring,
a plurality of webs designed in concentric rings, and
a stabilizing area designed in the shape of one of a tongue and
a rod.

13. (Amended) The micromechanical component according to claim 1,
further comprising:

a circuit structure [arranged] positioned on the at least one membrane.